

HELMINTHOLOGICAL ABSTRACTS

incorporating
BIBLIOGRAPHY OF HELMINTHOLOGY
For the Year 1942.



IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY
(HELMINTHOLOGY)

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FOR THE YEAR 1942.

Vol. XI, Part 2.

34—Acta Medica Scandinavica.

- a. ESKOLA, O., 1942.—“Ueber die Giftigkeit der Wurmmittel im Lichte von Bilirubinuntersuchungen.” 109 (5, 6), 548–565.

(34a) Eskola found that “*Extr. filicis maris*” and “*Extr. aspidii spinulosi*” were only slightly toxic to man in doses of 3.5 g. An increase of 0.5 g. in the dose, however, increased toxicity greatly. Kamala, 10 g., and pumpkin seeds, 150 to 200 seeds, were almost non-toxic. All these drugs caused a marked rise in the bilirubin and pigment content of the blood serum 12 to 24 hours after administration. It is suggested that the anthelmintics caused liver damage and retarded the excretion of pigments.

W.P.R.

35—Advisory Leaflet. Ministry of Agriculture and Fisheries. London.

- a. ANON, 1942.—“Stem and bulb eelworm. Horticultural crops.” No. 175, 4pp. [Revision of leaflet published in 1937.]
b. ANON, 1942.—“Stem and bulb eelworm. Agricultural crops.” No. 178, 3 pp. [Revision of leaflet published in 1933.]
c. ANON, 1942.—“Liver rot in sheep and cattle.” No. 310, 2 pp.
d. ANON, 1942.—“Common worms of the pig.” No. 312, 3 pp.

36—Agricultural Gazette of New South Wales.

- a. ANON, 1942.—“Root knot.” 53 (3), 139–140.

37—American Journal of Hygiene.

- a. SAWITZ, W. & KARPINOS, B. D., 1942.—“Statistical problems involved in the application of the NIH swab for the diagnosis of oxyuriasis.” 35 (1), 15–26.

(37a) In a “First approach to a complex problem” Sawitz & Karpinos have investigated statistically the efficiency of repeated examinations for *Enterobius* eggs with NIH swabs, under the simplifying assumption that all infested members of a population have equal intensities of infestation. Using the methods appropriate to binomial distributions, and starting from the observed prevalence rate and observed efficiency (of the NIH technique) deducible from limited repetitions of swabbing, they construct (i) a graphical chart relating observed efficiency to true efficiency for from 2 to 10 repetitions, and (ii) a table of “Proportion of infested children expected to be discovered”, from which the true prevalence rate can be calculated from the observed rate. This statistical procedure is applied to several sets of collected data by way of illustration. In the case of one home where 63 children were examined 7 times the observed efficiency of the NIH method was 17% against a true efficiency of only 0.6%, and the observed prevalence of *Enterobius* was 15.9% against the true prevalence of 45.4%. True, this was the least satisfactory of 4 homes tested, but it may prove startling to realize that in this case only 35% of infested children were found positive even after 7 repeated swabbings.

B.G.P.

38—American Journal of Public Health.

- a. ANDREWS, J., 1942.—“New methods of hookworm disease investigation and control.” 32 (3), 282–288.

(38a) In view of Augustine’s observation in Southern Alabama that hookworm larvae are absent from polluted soil from December till March, Andrews advises two treatments

with tetrachlorethylene during the winter months to all members of families in which hook-worm disease has occurred. The likelihood of re-infection during these cold months is slight, while if shoes are ever worn at all it is during this period. R.T.L.

39—American Journal of Tropical Medicine.

- a. CHANDLER, A. C., 1942.—“The guineaworm, *Dracunculus insignis* (Leidy, 1858), a common parasite of raccoons in East Texas.” 22 (2), 153–157.

(39a) “Worms in the feet” of raccoons are well-known to trappers in East Texas. These are identified as *Dracunculus insignis*. It is suspected by Chandler that *D. fuelleborni* of Travassos is a synonym, while the relation of *D. insignis* to *D. medinensis* has still to be settled when the male of *D. insignis* is available. R.T.L.

40—American Journal of Veterinary Research.

- a. ANDREWS, J. S. & MALDONADO, J. F., 1942.—“Intestinal pathology in experimental bovine esophagostomiasis.” 3 (6), 17–27.
b. THRELKELD, W. L. & JOHNSON, E. P., 1942.—“Control of the hog-kidney worm (*Stephanurus dentatus*).” 3 (6), 72–76.

(40a) Administering varying numbers of infective larvae of *Oesophagostomum radiatum* to 8 worm-free calves, in single and multiple doses, and killing the animals from 3 to 182 days after the last dose, Andrews & Maldonado found that the nodular lesions are distributed from pylorus to anus but are more numerous in the ileum, caecum and colon. After single doses of larvae dark nodules of 1 mm. diameter occur during the first 5 days; in the next 5 days the nodules acquire white centres due to leucocytic infiltration, and after 10 days they ulcerate, freeing the contained larvae. After 32 days most of the nodules have disappeared, and the resulting adults in the lumen of the intestine cause no gross pathological changes. Multiple infestations, on the other hand, lead to dense fibrous nodules persisting at least 182 days and frequently containing dead larvae; as a result there are relatively few adults in the lumen. This differing response is attributed to an acquired immunity. There was no evidence of secondary bacterial invasion. The histopathology is discussed and illustrated. B.G.P.

(40b) The complicated system of pig management, designed by the U.S. Bureau of Animal Industry to prevent infestation with *Stephanurus* in Georgia, is impracticable in the pea-nut areas of Virginia. Threlkeld & Johnson tried to modify this B.A.I. system but with insufficiently good results. Daily doses of 0.5 to 1 g. of phenothiazine for 5 months also failed to cure the disease, as did a single dose of 20 g. But laboratory experiments suggest that phenothiazine, given to sows or sprinkled on the ground, may be useful in preventing the development of *Stephanurus* eggs, and further work on this line is proposed. B.G.P.

41—Annals of Applied Biology.

- a. MILES, H. W. & MILES, M., 1942.—“Investigations on potato root eelworm, *Heterodera rostochiensis* Wollenweber. On the cyst population of a field over a series of years.” 29 (2), 109–114.

(41a) Soil samples were taken twice yearly for 12 years from a “potato sick” field and examined for numbers and viability of the eelworm cysts. After 7 years without potatoes the percentage of viable cysts had dropped from 87.1% to 21.9%, and the effective cyst concentration was reduced from 12.7 to 2.7 per 10 c.c. of soil. Potatoes were grown in the 8th and 11th years, and caused a considerable rise in the number of viable cysts. Although the resulting cyst population was similar to that associated with crop failure in the year before observations started, satisfactory crops were obtained, confirming the fact that other decisive factors besides eelworm are associated with potato sickness. M.T.F.

42—Annals of Tropical Medicine and Parasitology.

- a. CANNON, D. A., 1942.—“A case of human infection with a species of *Coenurus*.” 36 (1/2), 32–34.

(42a) Cannon records the presence of a cyst of *Coenurus* sp. parasitizing the right arm of a man in Northern Nigeria. He was unable to assign it to any particular species. P.A.C.

43—Archives of Otolaryngology.

- a. SHAHEEN, H., 1942.—“Bilharziasis of larynx.” 35 (2), 286–287.

44—Australian Veterinary Journal.

- a. FRANKLIN, M. C. & POWNING, R. F., 1942.—“The influence of storage on the chemical composition of nicotine sulphate and copper sulphate drench.” 18 (2), 72–75.

45—Berliner und Münchener Tierärztliche Wochenschrift.

- a. SPREHN, C., 1942.—“Ein neuer Acanthocephale aus der Amsel.” Jahrg. 1942 (23/24), p. 193.
b. GLAMSER, F., 1942.—“Ueber die Ursache einer Trichinoseepidemie. Trichinennachweis mit der Salzsäure-Pepsinanreicherung.” Jahrg. 1942 (25/26), 198–200.

(45a) *Prosthorrhynchus rectus* n. sp. from *Turdus merula merula* has 16 rows of 18 hooks each on the proboscis. It is near to *P. spiralis* but is much shorter. R.T.L.

(45b) An outbreak of trichinosis in Warsaw, affecting 17 people, was traced to the consumption of raw sausage prepared from the flesh of a pig which had not been subjected to meat inspection. Examination of specimens of the sausages in a compressorium proved negative, but the artificial digestion method showed that *Trichinella* were present. A.E.F.

46—Brasil-Medico.

- a. SENRA, J. DE M., 1942.—“Sobre a pesquisa de ovos de vermes pelo método de Hoffman, Pons e Janer, modificado.” 56 (10), 107–108.

(46a) Senra describes a modification of the Hoffman technique of faecal examination which has proved successful in an examination of 100 boys for helminths. The main advantages of this method are that a large quantity of faeces can be used, thus picking up light infections, and that no elaborate apparatus is required. Further details of technique and results are promised. P.A.C.

47—British Medical Journal.

- a. JOHNSTONE, R. D. C., 1942.—“Acute haemolytic anaemia following phenothiazine therapy.” Year 1942, 1 (4233), p. 259.
b. LAPAGE, C. P., 1942.—“Treatment of threadworms.” [Correspondence.] Year 1942, 1 (4249), p. 738.

(47b) By taking advantage of the mechanical effect of the administration of bismuth or barium in sweeping away mucus, and adults and ova of threadworms, C. P. Lapage has met with considerable success. His usual procedure is to give a meal of 1 oz. or if necessary 2 oz. to a child of five and a larger dose to older children. Where there is nocturnal perianal migration of worms an enema is given followed three days later by a bismuth or barium meal. R.T.L.

48—Bulletin. Oregon Agricultural Experiment Station.

- a. SHAW, J. N. & MUTH, O. H., 1942.—“Studies of parasites in Oregon sheep on irrigated pastures.” No. 402, 16 pp.

(48a) Shaw & Muth describe an experimental grazing of lambs on irrigated ladino clover pastures in the Willamette Valley (Oregon). Parasitism prevented the lambs from gaining weight and led to an 18% mortality, and the worm load (8,000 stomach worms and 14,000 intestinal worms—mainly trichostrongyles) proved too great for phenothiazine or tetrachlorethylene. B.G.P.

49—Canadian Journal of Research. Section D. Zoological Sciences.

- a. SWALES, W. E., SYLVESTRE, P. E. & WILLIAMS, S. B., 1942.—“Field trials of control measures for parasitic diseases of sheep.” 20 (5), 115–132.
b. McLEOD, J. A. & LITTLE, G. E., 1942.—“Continued studies on cercarial dermatitis and the trematode family Schistosomatidae in Manitoba. Part I.” 20 (6), 170–181.

(49a) Swales et al. recount in compressed detail the results of field anthelmintic tests on sheep at Ottawa from 1937 to 1941. In 1937 and 1938, tests with CuSO_4 , cunic, and C_2Cl_4 showed good results against stomach worms (though *Ostertagia* responded poorly to cunic), and

less satisfactory results with most intestinal forms; *Oesophagostomum columbianum* remained the major unsolved problem. The introduction of phenothiazine treatment in 1940, however, has been followed by a reduction in the incidence and intensity of nodular worms to negligible proportions, probably amounting to complete eradication. The dose was 40 g. to adults and 30 g. to yearlings, in tablet form, given before the pasturing season in early spring.

B.G.P.

(49b) It has been established experimentally that the adult of *Cercaria physella* Talbot, 1936, is *Pseudobilharziella quercedulae* McLeod, 1937 and the female and eggs are now described. Evidence is deduced that the human system becomes increasingly allergic to the proteins of schistosome larvae. A good coating of solid vaseline gave complete protection to the hand and arm during the operation of collecting snails even though the cercariae were abundant in the water.

R.T.L.

50—Canadian Public Health Journal.

- a. SCHNITZER, R. J., SIEBENMANN, C. & BETT, H. D., 1942.—“Chemical and toxicological studies on phenothiazine.” 33 (1), 17–24.

(50a) Schnitzer et al. have examined the toxicity of purified phenothiazine prepared by precipitation in 1% sodium formaldehyde sulfoxylate. Mice were found to tolerate a single dose of 5 g. per kg. or repeated doses of 1.25 g. per kg. to a total of 20 g. per kg. Dogs also tolerated large doses (a total of 16 g. per kg. was fed to one dog during a period of 39 days) with only occasional symptoms of distress and temporary anaemia. Guinea-pigs were more sensitive to the drug, losing weight when treated. An examination of the excretion of the drug in man showed that while a large proportion was eliminated in the urine in the first 48 hours, small amounts remained in the body 3 to 5 days longer.

W.P.R.

51—Current Science.

- a. BASIR, M. A., 1942.—“*Protrellina phyllodromi* sp. nov. a new trematode parasite of the cockroach *Phyllodromia humbertiana* Sauss.” 11 (5), 195–197.

(51a) Basir describes and figures *Protrellina phyllodromi* n.sp. from *Phyllodromia humbertiana*. The description is made from a single female specimen. The new species is differentiated from *P. galebi*, its nearest congener, and a key to the 6 species of *Protrellina* is included.

A.E.F.

52—Deutsche Medizinische Wochenschrift.

- a. GUTENSOHN, 1942.—“Spontanheilung bei Echinococcus cysticus der Lunge. Zugleich ein Beitrag zur Diagnose rundlicher Verschattungen in der Lunge.” 68 (4), 83–86.

53—Deutsche Tierärztliche Wochenschrift.

- a. SCHOOP, G., 1942.—“*Cysticercus tenuicollis* bei Rehen.” 50 (21/22), 226–227.
b. GÖTZE, R., 1942.—“Über Weidekrankheiten des Rindes.” 50 (27/28), 281–286; (33/34), 344–349. [Parasitic diseases pp. 346–348.]

(53a) Schoop records the frequent occurrence of *Cysticercus tenuicollis* in roe-deer, presumably in the district of Posen. The cysts were often found attached to the liver, often in very large numbers. They were also found on the mesenteries and the rumen. They approximated to a hen's egg in size, but might vary considerably. In a few cases pathological symptoms were associated with the presence of the cysts. The adult worm occurs in canines, particularly in hunting and sheep dogs, rarely in foxes, though experimental infections were achieved in the laboratory. The larva also occurs in sheep.

P.A.C.

(53b) In the course of a general account of cattle diseases Götze deals with lungworm, stomach worm and liver-fluke infestations. Special attention is paid to control measures.

A.E.F.

54—East African Agricultural Journal.

- a. CARMICHAEL, J., 1942.—“Phenothiazine in the treatment of strongylosis in horses.” 7 (4), p. 221.

(54a) Carmichael recommends phenothiazine against strongylosis in horses, given as powder mixed with the mash at the rate of 35 g. for horses, 30 g. for polo ponies, and 20 to

25 g. for yearlings. Molasses should be withheld. Egg-counts drop from several hundreds per gram to nil within 2 days.

B.G.P.

55—Farming in South Africa.

- a. ANON, 1942.—“Tetrachlorethylene-liquid paraffin mixture (‘Tetrol’).” 17 (195), 405-406.
- b. MÖNNIG, H. O., 1942.—“Control of worms in sheep.” 17 (196), 455-458.

(55a) A mixture of tetrachlorethylene and liquid paraffin kills hookworms of sheep. Each sheep must first be given 2.5 c.c. of a 10% solution of copper sulphate. The dose for lambs 3 to 6 months old is 7.5 c.c., 6 to 12 months 12 c.c., over 12 months 15 c.c. Giddiness is avoided if one or more parts of old motor oil is added to these doses. The treatment is repeated twice at intervals of 10 to 14 days. The remedy is also effective for hookworm in cattle. It is said, too, to be valuable against “wireworm” and the “bankrupt” worm in sheep and cattle.

R.T.L.

(55b) Mönnig holds that too much attention is paid to remedies in place of preventive measures such as good feeding, lambing at the correct times, rotational grazing, etc., by which 75% of the worm menace in sheep could be eliminated. Treatment should be used to remove the source of infection rather than to save the animal's life. A chart and calendar are given to guide the sheep farmer in the seasonal control of worms.

R.T.L.

56—Geneeskundig Tijdschrift voor Nederlandsch-Indië.

- a. BONNE, C., BORSTLAP, A. J. P., LIE KIAN JOE, MOLENKAMP, W. J. J., MOOR, C. E. DE & NANNING, W., 1942.—“Voortgezet onderzoek over echinostomiasis in Celebes.” 82 (1), 3-20.
- b. BONNE, C., BORSTLAP, A. J. P., LIE KIAN JOE, MOLENKAMP, W. J. J. & NANNING, W., 1942.—“Voortgezet Bilharzia onderzoek in Celebes.” 82 (1), 21-36.
- c. BAKAR, A., 1942.—“*Hymenolepis nana*-infectie in het krankzinnigengesticht te Lawang.” 82 (2), 85-86.

(56a) Bonne et al. have found 37-spined metacercariae of the *Echinostoma lindoensis* type in species of Corbicula, Viviparus, Bulinus and Limnaea in various lakes in Celebes. The adult fluke occurs naturally in man in the Lake Lindoe area but has not been found elsewhere except in one old rat from the Lake Poso area. Man, rat, mouse, pigeon and duck have been experimentally infested. Another echinostome with 45 spines occurs in the Lindoe molluscs: its definitive host is unknown. A distribution-list of aquatic molluscs, and a list of cercariae met with, are added.

B.G.P.

(56b) Bonne et al. state that *Bilharzia japonica* occurs around Lake Lindoe (Celebes) in man, dog and deer—in which the worms develop well. Eggs were numerous in the intestinal sub-mucosa, liver, and lung capillaries, and occasionally in pancreas and abdominal lymph glands. Neither Oncomelania nor any furcocercous cercariae have been found from Lindoe: a likely cercaria from a Limnaea from Lake Poso failed to reach sexual maturity in a mouse: bilharziasis is not known in this region.

B.G.P.

(56c) Listing the parasites found between 1934 and 1940 in the Lawang lunatic asylum, Bakar draws attention to the presence of *Hymenolepis nana*.

B.G.P.

57—Indian Journal of Veterinary Science and Animal Husbandry.

- a. BHALERAO, G. D., 1942.—“On some trichostrongyles of domestic ruminants in India.” 12 (1), 24-29.
- b. VAIDYANATHAN, S. N., 1942.—“A preliminary note on the incidence of *Strongyloides papillosus* Wedl, 1856 in India.” 12 (1), 37-44.

(57a) Largely based on a collection of worms of domesticated animals at Mukteswar, Bhalerao gives succinct descriptions of *Trichostrongylus colubriformis*, *T. extenuatus*, *T. probolurus*, *Cooperia pectinata*, *C. punctata*, *Ostertagia ostertagi*, *Marshallagia orientalis*, *Camelostrongylus mentulata* and *Haemonchus longistipes*.

R.T.L.

(57b) *Strongyloides papillosus* is recorded for India and occurred in 60% of 150 young calves, but none were found in 400 animals over 2 years of age. The various free-living larval stages are described. In sheep it did not appear to be of pathogenic importance but in the mink it caused serious trouble when present in large numbers.

R.T.L.

58—Indian Medical Gazette.

- a. MAPLESTONE, P. A. & BHADURI, N. V., 1942.—“A record of *Trichinella spiralis* (Owen, 1835) in India.” 77 (4), 193-195.
- b. ANON, 1942.—“Trichinelliasis.” [Editorial.] 77 (4), 223-224.
- c. HEILIG, R., 1942.—“The pathological heart conditions in hookworm disease and their causes.” 77 (5), 257-261.
- d. WILKINS, E. G., 1942.—“A simple method of counting hookworm eggs in faeces.” 77 (5), 275-279.

(58a) *Trichinella spiralis* has not been recorded heretofore in India. An examination of 100 pigs, 100 dogs and 100 rats gave negative results but in the 74th cat examined there was a large number of larvae. R.T.L.

(58d) Cutting a graduated 1 c.c. pipette at each 0.2 c.c. graduation, Wilkins uses these short lengths to sample a stool by repeatedly “stabbing” it until the faeces rise to the 0.1 c.c. mark. The contents are extruded by a wire plunger into a counting cell, 0.9 c.c. of a saturated solution of salt in glycerine (sp. gr. 1.300) are added, the sample is emulsified by means of the wire, a coverglass is superimposed, and after 30 minutes the floating eggs are counted. Multiplication by 10 gives eggs per c.c. of faeces. The method is intended for clinicians lacking full laboratory facilities. B.G.P.

59—Journal of the American Veterinary Medical Association.

- a. ANON, 1942.—“A case of Strongyloides infection in a pup.” 100 (782), p. 437.
- b. McCULLOCH, E. C., 1942.—“Phenothiazine-medicated pellets for range sheep.” 101 (785), 114-119.

(59b) McCulloch points out that individual dosing of sheep is rarely possible under western range conditions, as found in Washington State. It is a local custom to feed winter concentrates in the form of pellets made from pea products, and he finds that sheep will readily eat medicated pellets of the following percentage composition: phenothiazine 15, finely ground oats 30, pea products meal 45, molasses 10, at 4 to 8 oz. per sheep (17 to 34 g. phenothiazine). For individual dosing he recommends a dough of phenothiazine 5 and molasses 4, fed solid or as a suspension in water. It is suggested that oat flour, as an anti-oxidant, and the reducing sugars in molasses both delay the oxidation of phenothiazine to products objectionable to sheep. B.G.P.

60—Journal of Animal Ecology.

- a. WILLIAMS, D. W., 1942.—“Studies on the biology of the larva of the nematode lungworm, *Muellerius capillaris* in molluscs.” 11 (1), 1-8.

(60a) An investigation of the life-history of *Muellerius capillaris* confirms the findings of Hobmaier & Hobmaier. Williams however is able to add *Milax sowerbyi* and *Hyalinia cellaria* to the list of molluscan intermediate hosts. The common slug *Arion ater* is not a suitable vector. Nearly 20% of the molluscs examined in the Cardiff area and in the Rhondda valley were naturally infected. There were no molluscs at the top of the mountains. The nematode larvae can use any suitable species of mollusc and show no preferences. P.A.C.

61—Journal of the Council for Scientific and Industrial Research. Australia.

- a. GORDON, H. McL., 1942.—“A note on the possible anthelmintic value for sheep of phenothiazine incorporated in feed or lick.” 15 (1), 54-55.
- b. WHITLOCK, H. V., 1942.—“The preparation and examination of faecal cultures for the differentiation of larvae of sheep nematodes.” 15 (1), 56-58.

(61a) From preliminary experiments using phenothiazine as a constituent of concentrates or of licks for lambs, Gordon concludes that the amount consumed is too irregular for this to become an economic procedure. Moreover, whilst *Haemonchus* and *Oesophagostomum columbianum* respond well under favourable conditions, there is little effect on *Trichostrongylus*. B.G.P.

(61b) Whitlock modifies Veglia's original technique for culturing sheep nematode larvae by breaking down faeces with an electric mixer (adding powdered faeces that have been dried

at 200° for 2 hours, if the faecal sample is too soft), incubating the mixture with sufficient water in 2 oz. screw-stoppered bottles at 27° C. for 7 days, and washing infective larvae from the upper walls of the bottles into glass troughs containing a few drops of half-saturated aqueous iodine solution.

B.G.P.

62—Journal of Parasitology.

- a. HERBER, E. C., 1942.—“Life history studies on two trematodes of the subfamily Notocotylinae.” 28 (3), 179–196.
- b. CULBERTSON, J. T., 1942.—“Active immunity in mice against *Trichinella spiralis*.” 28 (3), 197–202.
- c. CULBERTSON, J. T., 1942.—“Passive transfer of immunity to *Trichinella spiralis* in the rat.” 28 (3), 203–206.
- d. GREENFIELD, S. H., 1942.—“Age resistance of the albino rat to *Cysticercus fasciolaris*.” 28 (3), 207–211.
- e. CARVALHO, J. C. M., 1942.—“Studies on some Gordiacea of North and South America.” 28 (3), 213–222.
- f. PERES, C. E., 1942.—“*Trichinella spiralis*. II. Incidence of infection in hogs and rats in the New Orleans area.” 28 (3), 223–226.
- g. CHANDLER, A. C., 1942.—“*Mesocostoides manteri* n.sp. from a lynx, with notes on other North American species of *Mesocostoides*.” 28 (3), 227–231.
- h. HERDE, K. E., 1942.—“A new spiruroid nematode, *Thelazia buteonis*, from Swainson's hawk.” 28 (3), 241–244.
- i. ROTH, H. & CHRISTENSEN, N. O., 1942.—“Occurrence in the horse of two parasites of cattle, *Ostertagia ostertagi* (Stiles, 1892) and *Cooperia oncophora* (Railliet, 1898).” 28 (3), p. 245.

(62a) Herber describes the morphology and life-history of *Notocotylus stagnicolae* n.sp., a parasite of the caecum of various galliform birds in Michigan. It can be distinguished by the extent of the vitellaria, the shape of the testes and the size of various other parts of the genitalia. Study of the life-cycle has shown that various larval characters have a diagnostic value, particularly in the cercaria stage. The intermediate host is *Stagnicola emarginata*. The life-cycle of *Quinqueserialis quinqueserialis*, using the intermediate host *Gyraulus parvus*, is also described.

P.A.C.

(62b) Culbertson found that prior infection with *Trichinella spiralis* rendered mice partially immune to re-infection with the same parasite. Repeated vaccination with antigens from the same worm had similar effects. In both cases the immunity appeared to be directed particularly against the intestinal phase. Unfortunately, however, the partially immunized mice seemed hypersensitive to *Trichinella* substance and acute early symptoms, frequently fatal, were observed when the test infection was given.

W.P.R.

(62c) Culbertson found that rats could be passively immunized against *Trichinella spiralis* by the intraperitoneal injection of serum from infected rats. The amounts of serum used, 3 c.c. per 100 g. body weight 2 days before and one day after giving the test infection, did not confer an immunity as effective as that produced by active immunization.

W.P.R.

(62d) Greenfield has examined the cysticercus burden of rats of various ages following experimental exposure to suspensions of eggs of *Taenia taeniaeformis*. They are almost completely immune to infection when younger than 25 days or older than 60 days. During the intermediate period they are highly susceptible. The immunity of the nurselings is complete whether they are born to clean or infected mothers. The clean mother may transfer an inhibitory substance of a non-specific nature though infected mothers transfer a specific immune body to the young.

P.A.C.

(62e) Carvalho records two human cases of infestation with Gordiacea; in one a *Paragordius varius* was passed living in faeces, in the other a *P. esavianus* n.sp. was expelled from the urethra. Several species are reduced to synonymy and the following new forms are described, in addition to *P. esavianus*: *Pseudochordodes manteri* n.g., n.sp. and *Neochordodes moraisi* n.g., n.sp.

B.G.P.

(62f) Although *Trichinella spiralis* has been shown to occur in 5% to 6% of the human population at New Orleans no cases of infection were detected in 915 pigs, of which 516 were

of southern and 319 of midwestern origin, or in 50 samples of pork sausage. Of 467 rats examined 0.4% were positive; none of the 280 rats captured at the abattoirs were infected.

R.T.L.

(62h) To the 20 previously known avian species of *Thelazia*, Herde adds *T. buteonis* from the orbit of *Buteo swainsoni* collected in Oklahoma.

R.T.L.

63—Journal of Pharmacology and Experimental Therapeutics.

- a. ANDREWS, J. C. & CORNATZER, W. E., 1942.—“Some properties of ficin.” 74 (2), 129–133.

64—Journal of the Royal Sanitary Institute.

- a. HOWELL, N. G., 1942.—“The public health aspect of trichiniasis.” 62 (1), 1–5.
b. ANTHONY, D. J., 1942.—“*Trichinella spiralis*.” 62 (1), 5–8.

65—Journal of Wildlife Management.

- a. WALLACE, F. G., 1942.—“The stomach worm *Obeliscoides cuniculi* in the woodchuck.” 6 (1), p. 92.

(65a) Wallace records the presence of *Obeliscoides cuniculi* in *Marmota monax* in Minnesota. The strain was infective to rabbits but not to guinea-pigs.

P.A.C.

66—Madras Medical College Magazine.

- a. MOORTHY, V. N., 1942.—“Recent advances in guinea-worm studies.” 21 (2), [Reprint 12 pp.]

(66a) In India dracontiasis is limited to the first half of the year and chiefly occurs in the driest period just before the monsoon, i.e. in March, April and May. It is however probably more closely related to the nature of the water supply than to climatic factors. As a rule infection prevails only in those villages where step wells are the main water source. Where small cyclopedocidal fish occur in these step wells guinea-worm is absent. The commonest species is *Barbus puckelli* which was present in over 50% of the wells investigated in areas where there was no guinea-worm. In certain villages there are “guinea-worm houses” and infected individuals are re-infected annually. While the treatment of guinea-worm is still unsatisfactory the distressing prodromal symptoms that accompany the formation of the blister may be almost immediately relieved by the injection of 9 to 10 mm. of a 1 in 1,000 solution of adrenaline hydrochloride. The routine now being applied in the Chitaldrug district of the Mysore State for the control of dracontiasis is set out in detail.

R.T.L.

67—Nature. London.

- a. ELLENBY, C., 1942.—“Trace-elements and ‘potato-sickness’.” 149 (3767), p. 50.

(67a) This is a preliminary account of the effects of treating potatoes growing in land heavily infected with the potato root eelworm with dilute solutions of salts of boron, zinc, cobalt, manganese, calcium and nickel. Each solution was used in three concentrations and each concentration applied in weekly doses to five plants: untreated rows alternated with treated. Height and yield of each plant were measured. The mean height of the 5 similarly treated plants varied with the concentration of the solution, being greatest with highest concentrations. Boric acid, zinc sulphate, and manganese chloride had the greatest effect. The greatest differences between treated and adjacent control plants were in the region where the most dilute solutions were used, the plants receiving the most dilute solution of zinc having a mean height 40% greater than that of the adjacent controls, though each plant received only 0.05 mg. of zinc during the whole season. The yields of tubers agreed in general with the heights of the plants.

M.T.F.

68—North American Veterinarian.

- a. HABERMANN, R. T., FOSTER, A. O. & HUMMON, O. J., 1942.—“Treating pregnant ewes with phenothiazine.” 23 (6), 390–393.

(68a) Habermann et al. report that phenothiazine in doses of 25 g. per animal was well tolerated by pregnant ewes, the lambing of the 140 treated animals being normal. Several ewes which were given abnormally large doses of the drug produced healthy lambs. W.P.R.

69—Northwest Science.

- a. GUSTAFSON, P. V., 1942.—“Some parasites of fresh water fish of the Spokane area.” [Abstract.] 16 (1), p. 28.

70—Parasitology.

- a. SRIVASTAVA, H. D., 1942.—“Whipworms and blood-flukes in dogs in India, with remarks on trichuriasis.” 34 (1), 122–123.
 b. SRIVASTAVA, H. D., 1942.—“New hemiurids (Trematoda) from Indian marine food fishes. Part III. Two new parasites of the genus *Lecithocladium* Lühe, 1901 (subfamily Dinurinae Looss, 1907).” 34 (1), 124–127.
 c. SRIVASTAVA, H. D., 1942.—“New allocreadiids (Trematoda) from Indian marine food fishes. Part IV. The morphology and systematic position of a new genus, *Horatrema*, of digenetic trematodes.” 34 (1), 128–132.
 d. BHALERAO, G. D., 1942.—“On two helminths of domestic ruminants in India.” 34 (2), 133–137.
 e. BHALERAO, G. D., 1942.—“On a new species of trematode from a spoon-bill in Afghanistan.” 34 (2), 138–140.
 f. WATKINS, C. V. & HARVEY, L. A., 1942.—“On the parasites of silver foxes on some farms in the South-West.” 34 (2), 155–179.
 g. FANTHAM, H. B., PORTER, A. & RICHARDSON, L. R., 1942.—“Some Haematozoa observed in vertebrates in Eastern Canada.” 34 (2), 199–226.

(70a) *Schistosoma suis* in dogs is now reported for the third time from India and on the first occasion from Northern India. *Trichuris vulpis* is now recorded in dogs in India for the first time. R.T.L.

(70b) Srivastava now gives fuller descriptions of *Lecithocladium harpodontis* and *L. brevicaudum* first described as new species by him in 1937. R.T.L.

(70c) *Horatrema pristipomatis* n.g., n.sp., from the marine fish *Pristipoma operculare*, is described and made the basis of a new subfamily Horatrematinae in the Allocreadiidae. The new genus forms a link between *Cymbephallus*, *Parvacreadium* and *Notoporus*. As *Notoporus trachuri* has a cirrus sac it is assigned to a new genus *Neonotoporus*. Notoporidae Yamaguti is reduced to the rank of a subfamily, Notoporinae, containing *Notoporus* and *Neonotoporus*. R.T.L.

(70d) A new monostome named *Cymbiforma indica* n.sp. is very common in goats and sheep and occurs occasionally also in bulls at Mukteswar. The diagnosis of the genus and of the subfamily Cymbiforminae have been emended. It is recorded that *Capillaria bilobata* formerly described by the author from cattle has now been obtained from a goat. R.T.L.

(70e) From the trachea of *Platalea leucorodia* var. *major* is described *Orchipedum akhtari* n.sp. which is nearly related to *O. sufflavum*. R.T.L.

(70f) Watkins & Harvey have examined the incidence of helminthiasis among silver foxes and a few red foxes in England. *Capillaria plica*, *Eucoleus aerophilus*, *Crenosoma vulpis*, *Uncinaria stenocephala*, *Toxocara canis* were commonly present. *Taenia pisiformis* was the sole representative of the Cestoda. *C. vulpis* has an interesting geographical distribution, being abundant in some places, totally absent in others and there seems to be an inverse correlation between infections with the worm and with *E. aerophilus*. *Echinococcus granulosus* was absent. P.A.C.

(70g) In a memoir devoted chiefly to protozoal infections a non-sheathed *Microfilaria rananae-sylvaticae* n.sp. is described. This makes the fourth species to be recorded for North American frogs. R.T.L.

71—Phytopathology.

- a. LINFORD, M. B., 1942.—“The transient feeding of root-knot nematode larvae.” 32 (7), 580–589.

- b. NEWHALL, A. G. & STARK, jr., F. L., 1942.—“Chloropicrin and ethylene dichloride for root-knot nematode control.” 32 (7), 626-630.
- †c. SHAW, L., 1942.—“Results of preliminary experiments on the control of root diseases of the peach.” 32 (7), p. 649.
- †d. SMITH, A. L., 1942.—“Further studies on the reaction of commercial cotton varieties to root-knot nematode.” 32 (7), 649-650.
- †e. TAYLOR, A. L., 1942.—“Root-knot resistance of five soybean varieties.” 32 (7), p. 650.
- †f. TAYLOR, A. L., 1942.—“Chemical control of root knot.” 32 (7), p. 650.
- †g. THORNE, G., 1942.—“Distribution of the root-knot nematode in high ridge plantings of potatoes and tomatoes.” 32 (7), p. 650.
- †h. THORNE, G., ALLEN, M. W., HARE J. & LINDSAY, M. A., 1942.—“Populations of root-knot nematode larvae in two Kern County, California, fields.” 32 (7), 650-651.

(71a) Linford describes observations made on living larvae of *Heterodera marioni* associated with their host roots. Larvae were observed feeding on epidermal cells of the root, entering roots and feeding during migration. Their movements were similar to those made by females at their permanent feeding sites, but were more rapid. Individual larvae cause death and sometimes hypertrophy of some of the cells along the migration route, but feeding is not necessarily lethal and there appeared to be no bacterial injury associated with the larvae. Entry of larvae into a root may cause deep wounds or cracks and, when numerous larvae invade, disintegration of the root tip occurs. This does not usually happen until first and second generation larvae attack. M.T.F.

(71b) The authors tested chloropicrin, ethylene dichloride and a 1 in 9 mixture of the two as nematocides in a greenhouse with sandy soil heavily infested with *Heterodera marioni*. The chemicals were injected at 10 inch intervals, 4 to 5 inches deep, at the following rates: chloropicrin 2 c.c. per injection (460 lb. per acre), ethylene dichloride 15 c.c. (2,656 lb. per acre) and the 1 in 9 mixture 10 c.c. (230 lb. chloropicrin plus 1,594 lb. ethylene dichloride per acre). Each treatment was given to four plots, which, with four controls, were arranged in a 4×4 Latin square. The chemicals were applied in September; the tomatoes were planted the following April and dug at the end of August, when 15 roots per plot were examined and classified according to the degree of galling. Each plant was given 4, 3, 2, 1 or 0 points, the most heavily galled receiving 4 and unaffected plants 0. Mean “scores” for the four treatments were: control 49.7, ethylene dichloride 28.75, chloropicrin 8.25, and mixture 3.25. Ethylene dichloride, either alone or in a mixture, is considered to be too expensive in practice at its present price. M.T.F.

(71c) Peach trees removed from two old orchards showed root-knot, crown gall and root rots. Ten chemical treatments were carried out on the soil, and two months later the plots were planted with the peach “Belle of Georgia” on native stock, and on one non-treated plot with the same peach on Shalil stock. It was found that (i) Shalil stock was almost immune from root-knot but susceptible to crown gall, (ii) urea gave good disease control but caused stunting of the trees, (iii) chloropicrin gave moderate root-knot control at one of the orchards, (iv) the other treatments were ineffective. M.T.F.

(71d) The author has developed a system whereby root-knot susceptibility can be expressed by a number, thus enabling comparisons to be made and results to be analysed statistically. A comparison of 25 commercial cotton varieties shows wide variations in susceptibility and possibilities for improving resistance. There is evidence suggesting that root-knot resistance is inherited recessively. M.T.F.

(71e) Tests with five varieties of soybeans in four experiments at three places gave erratic results suggesting that resistance to root-knot varies with ecological conditions. No variety was resistant enough to be useful in a nematode-reducing rotation. M.T.F.

(71f) Taylor states that the root-knot nematode (*Heterodera marioni*) can be controlled in soil in the field and greenhouse by applications of chloropicrin, ethylene dichloride, carbon bisulphide or methyl bromide. The latter is particularly effective for treating potting soil. Costs per acre are given. Ethyl mercury iodide may be used for potting soil, but is toxic to some plants. M.T.F.

† Abstract of a paper presented at the 1942 Annual Meeting of the Southern Division of the American Phytopathological Society, Memphis, Tennessee, February 1942.

(71g) It was observed that in the potato fields of western Nevada, where the soil is saturated by irrigation, root-knot damage is severe. Where the plants are grown in ridges with deep furrows, or where the land slopes and the irrigation water runs away quickly, only the tubers near the water level are badly damaged. Similarly in Californian tomato fields (although climate and soil are very different), shallow irrigation, with the plants growing in high ridges, resulted in good crops, while in saturated soil severe damage was caused by root-knot.

M.T.F.

(71h) Soil was taken to a depth of 5 feet from two fields heavily infested with *Heterodera marioni*, and examined for larvae by Cobb's methods. Great variations in numbers were found. The highest population per sample varied from the 7 to 12 inch to the 55 to 60 inch sections, but was usually at or below the 19 to 24 inch section. The distribution appeared to be determined by the position of roots of cotton or alfalfa grown during the preceding 3 years. Young alfalfa roots growing after cotton were rarely attacked, though surrounded by larvae, possibly due to the development of distinct strains of the nematode or of host preferences. The observations emphasize the futility of chemical treatment of soils such as these where nematodes abound at and below a depth of 5 feet.

M.T.F.

72—Plant Disease Reporter.

- a. LYLE, E. W. & ALTSTATT, G. E., 1942.—“A rose understock resistant to root knot nematode.” 26 (7), p. 171.
- b. HENDERSON, R. W., 1942.—“*Ditylenchus dipsaci* on *Trifolium pratense* in New York State.” 26 (8), 199–200.
- c. BOYD, O. C., 1942.—“Strawberry spring dwarf situation on Cape Cod.” 26 (10), 241–242.

(72a) The authors describe a hybrid rose understock *Rosa multiflora* × *R. blanda*, which, during two seasons' growth in soil infected with *Heterodera marioni*, showed no symptoms of root-knot; neither did microscopic examination reveal any infection.

M.T.F.

(72b) Henderson found that the stem eelworm, *Ditylenchus dipsaci*, appeared as a destructive parasite of red clover plants which were being propagated in flats of sterilized sand for plant breeding purposes. The occurrence of the parasite under field conditions was not actually observed but it must have been there since cuttings brought in from the field, and potted in steam-sterilized soil, developed the typical symptoms of disease. Attempts to free cuttings from the disease by hot-water treatment failed. It was found experimentally that this strain of the stem eelworm could successfully parasitize seedlings of the following: *Trifolium pratense*, *T. repens*, *T. hybridum*, *T. fragiferum*, *T. involucreatum*, *Soja Max*, *Pisum arvense*, *Medicago sativa* and *Allium cepa* but failed to adapt itself to *Triticum vulgare*, *Hordeum vulgare*, *Avena sativa*, *Secale cereale*, *Taraxacum officinalis* and *Plantago lanceolata*.

T.G.

(72c) Boyd reports on the spring dwarf disease of strawberry plants associated with the eelworm, *Aphelenchoides fragariae*, in the Falmouth area of Cape Cod. Both in 1941 and 1942 injury to plants was less than in previous years and this is associated with the restocking of farms with locally grown or northern grown nursery stock instead of with southern grown stock. Mention is made of the fact that demonstrations carried out in conjunction with Dr. J. R. Christie have proved that *Aph. fragariae* cannot survive in soil from the end of one season to the beginning of the next and apparently infected plants are the only source of the disease.

T.G.

73—Poultry Science.

- a. REID, W. M., 1942.—“The removal of the fowl tapeworm *Raillietina cesticillus* by short periods of starvation.” 21 (3), 220–229.

(73a) Reid finds that strobilae of *Raillietina cesticillus* are passed by chickens during periods of starvation: the scolex is not affected. Starvation following the intake of mature cysticercoids does not prevent the establishment of an infection though growth does not occur until food is given. The scolex can withstand up to 20 days starvation.

P.A.C

74—Proceedings of the Indian Academy of Sciences. Section B.

- a. BHALERAO, G. D., 1942.—“The genus *Cephalogonimus* in India and Burma.” 15 (4), 178–180.

(74a) Bhalerao discusses the 5 species of *Cephalogonimus* which had been recorded from India between 1930 and 1937. *C. mehri* (1932), *C. minutum* (1937) and *C. burmanica* (1936) are recognized as distinct. The last named approximates *C. europaeus* (1910). *C. amphiumae* is now considered quite distinct from *C. magnus* (1932) which is identical with *C. emydalis* (1930), being merely a larger variety.

R.T.L.

75—Report. Cornell University Agricultural Experiment Station.

- a. NEWHALL, A. G. & CHITWOOD, B. G., 1942.—“The bulb nematode disease of onions.” 44th (1941), pp. 152–153.

(75a) Newhall & Chitwood report on the occurrence of “bloatiness” in onions due to the stem eelworm, *Ditylenchus dipsaci*, grown on the muck lands of certain counties in New York State. The parasite persists in onion trash and in volunteer bulbs left in the field. Mention is made of certain other cultivated host plants including narcissus, celery and leek, and of chemicals being tested as control measures. Apparently if all trash and affected bulbs are removed from the soil the parasite cannot persist through a summer period and the authors point out that a rotation omitting onions for one season would be a valuable means of eradicating the disease if growers would but adopt it.

T.G.

76—Revista Brasileira de Biologia.

- a. CABALLERO y C., E., 1942.—“Trematodos de las ranas de la ciénaga de Lerma, Estado de Mexico. II. Descripción de una nueva especie de *Haematoleechus*.” 2 (2), 155–158. [English summary p. 158.]
 b. LENT, H., 1942.—“Nota sobre o encontro de cisticercos de *Taenia solium* L., 1758 com dois escólices.” 2 (2), 197–201. [English summary p. 201.]
 c. TRAVASSOS, L., 1942.—“Sobre um interessante trematódeo parasito dos seios maxilares de gambá (*Didelphis marsupialis*).” 2 (2), 213–218.

(76a) Caballero describes *Haematoleechus illimis* n.sp. from the lungs of *Rana montezumae* from Mexico. The differences from other species include the complete lack of cuticular spines, the distribution of the grouped vitelline follicles, the form and size of the gonads and terminal genitalia, and the sucker ratio.

N.G.S.

(76b) Lent describes specimens of *Cysticercus cellulosae* from pigs in Matadouro, in each cyst of which there were 2 scolices. Each scolex had the typical 4 suckers. Pairs of scolices did not however necessarily carry the same number of hooks. The scolices appeared to be normal morphologically.

P.A.C.

(76c) *Achillurbainia recondita* n.sp., described by Travassos, is the second species in the peculiar genus described by Dollfus, which is characterized by the testes being in scattered follicles among the vitellaria. In the present species from the maxillary sinus of *Didelphis marsupialis* the testicular follicles are smaller than the vitellaria, and in some specimens the latter are missing from certain wide tracts of the body where they are normally present. A further peculiarity is that the ends of the intestinal crura are attached to the distal end of the excretory bladder by ligamentous bands. The description of a young form prior to the development of testes and vitellaria is included.

N.G.S.

77—Skandinavisk Veterinär-Tidskrift.

- a. KOFFMAN, M., 1942.—“Bidrag till kännedomen om parasiter hos husdjur och vilt i Sverige. III. Parasitfaunan hos bisonoxe, visent (Bison Europeus).” 32 (3), 150–192. [German summary pp. 187–191, English summary pp. 191–192.]

(77a) Amongst 16 species of helminths which he found in 13 bison, Koffman records 11 species commonly found in cattle and sheep and also the following new species, all of which are described and figured: *Capillaria bisonis*, *Dictyocaulus bisonis*, *Nematodirus bisonis*, *Ostertagia gracilis* and *Cooperia bisonis*. *Fasciola hepatica* was fairly numerous in 5 cases.

B.G.P.

78—Southern Medical Journal.

- a. TUCKER, C. B. & CHISOLM, J. M., 1942.—“A study of intestinal parasites in relation to excreta disposal facilities in Cocke County, Tennessee, 1940.” 35 (5), 476-484.

79—Tierärztliche Rundschau.

- a. GANSLMAYER, R. & WINTERHALTER, M., 1942.—“Ein Beitrag zur Wirkung des Tetrachlorkohlenstoffes.” 48 (25/26), 213-216.
 b. BAARS, G., 1942.—“Distomeen (*Agamodistomum suis*) in der Muskulatur des Schweines.” 48 (29/30), 255-257.

(79a) Ganslmayer & Winterhalter give an account of the histological changes induced by the intraperitoneal injection of 1 c.c. of carbon tetrachloride in rats. Damage was confined to the liver and the chief changes were as follows: 1st day, necrotic areas with peripheral fatty infiltration in the liver parenchyma; 2nd day, fatty infiltration covering all necrotic areas; first appearance of inflammation; 3rd and 4th days, fat and cellular detritus disappearing and mild lymphocyte and leucocyte infiltration taking place. After the 4th day the necrotic areas disappeared and regeneration was rapid until on the 7th day the liver was normal except for isolated endothelial cells showing phagocytosed pigment.

W.P.R.

(79b) Baars refutes the view advanced by Bugge [see Helm. Abs., Vol. XI, No. 27b] that *Agamodistomum suis* is exclusively a parasite of the body cavity: he has found them, in a heavily infested wild pig, in sections of muscle where they appear to lie in cavities lined by connective tissue elements. Nevertheless they are not encapsulated in Leuckart's sense of a closely investing membrane: rather, the cavities represent tracts excavated by the actively motile flukes.

B.G.P.

80—Transactions of the American Microscopical Society.

- a. HUNTER, III, G. W. & HUNTER, W. S., 1942.—“Studies on host-parasite reactions. V. The integumentary type of strigeid cyst.” 61 (2), 134-140.
 b. REMLEY, L. W., 1942.—“Morphology and life history studies of *Microcotyle spinicirrus* MacCallum 1918, a monogenetic trematode parasitic on the gills of *Aplodinotus grunniens*.” 61 (2), 141-155.
 c. CHANDLER, A. C., 1942.—“The morphology and life cycle of a new strigeid, *Fibricola texensis*, parasitic in raccoons.” 61 (2), 156-167.
 d. OLIVIER, L., 1942.—“Four new species of strigeid cercariae from Northern Michigan and the metacercaria of one of them.” 61 (2), 168-179.
 e. BROCK, M. E., 1942.—“A new hymenolepidid tapeworm, *Hymenolepis filumferens*, from the blue-winged teal.” 61 (2), 180-185.
 f. POLK, S. J., 1942.—“A new hymenolepidid cestode, *Hymenolepis dafilae*, from a pintail duck.” 61 (2), 186-190.
 g. CHRISTENSON, R. O., EARLE, jr., H. H., BUTLER, jr., R. L. & CREEL, H. H., 1942.—“Studies on the eggs of *Ascaridia galli* and *Heterakis gallinae*.” 61 (2), 191-205.
 h. VAN CLEAVE, H. J., 1942.—“A reconsideration of *Plagiorhynchus formosus* and observations on *Acanthocephala* with atypical lemnisci.” 61 (2), 206-210.

(80a) Hunter & Hunter examine the structure of the metacercarial cysts of *Crassiphiala bulboglossa* and *Neascus rhinichthysi* occurring in the skin between the scales of *Perca flavescens* and *Atratulus atronascus* respectively. As in the deeper penetrating cyst of *Uvulifer ambloplitis* in the bass [see Helm. Abs., Vol. X, No. 316c] there is an inner hyaline layer produced by, and similar to, the cuticula of the parasite, and an outer connective tissue capsule with melanin, produced as a reaction by the host. This latter is thinner and less dense in cysts from the perch and dace.

N.G.S.

(80b) The life-cycle of a microcotylid has been described for the first time and compared with that of other Monogenea. Remley has shown that the complete development of *Microcotyle spinicirrus* can take place on the gills of a single host (*Aplodinotus grunniens*—a fresh-water fish from North America). The ciliated larva is negatively phototropic while swimming, and has a cotylophore with 6 pairs of hooklets and 2 pairs of anchors, this is used in a looping locomotion when the cilia are lost and the clamps of the adults are being developed; the anchors are retained up to the 20 to 30 clamp stage. Clamps continue to be produced throughout life from a syncytial region at the junction of the body with the cotylophore. The

anatomy of adults up to 13 mm. long is compared with that of adult worms of about a quarter this size described by previous authors, and it is found that the eggs are larger, the clamps and genital hooks more numerous in the larger forms. Hence, neither egg size nor number and size of skeletal parts can be used as absolute specific criteria in this group of Monogenea. All skeletal parts give a negative chitin test. Infection increases with the age of the host and yearlings are not infected. N.G.S.

(80c) The life-history of *Fibricola texensis* n.sp. from *Procyon lotor lotor* in East Texas is described by Chandler. After rather a long incubation period, miracidia hatch and penetrate *Physa anatina*, giving rise to filamentous daughter sporocysts which produce cercariae with a flame cell pattern $2(1+1+1)+(1+1+(1))$. These develop into unencysted diplostomulae in the body cavity of tadpoles of *Rana* spp., from which they can be transferred to other Amphibia and reptiles without change or encystment. Development was not completed in rats or cats but only in raccoons. All the stages are described and comparisons with related forms show that, as the characters of the cercaria and the distribution of the vitellaria in the adult show a continuous variation in members of Alariinae and Diplostominae, the former is merged with the latter. N.G.S.

(80d) Descriptions are given of 4 new species of strigeid cercariae: *Cercaria higginsii* n.sp., with 6 small post-acetabular penetration glands, from *Stagnicola emarginata angulata*; *C. caperata* n.sp., with 4 pairs of penetration glands, from *Stagnicola caperata*; *C. saileri* n.sp. with 4 large penetration glands, from *Stagnicola emarginata angulata*; *C. elodes* n.sp., also with 4 large penetration glands, from *Stagnicola palustris elodes*. The cercariae of the last were found to penetrate into the notochord, especially of the tail region, of tadpoles of *Rana pipiens* and there develop as unencysted diplostomula. N.G.S.

(80e) *Hymenolepis filumferens* n.sp. from *Anas discors* is differentiated from 13 other species described from birds which likewise possess a cirrus with a stylet. R.T.L.

(80f) *Hymenolepis dafilae* n.sp. is reported from *Dafila acuta tzitzihoa* in Oklahoma. This species possesses a cirrus stylet and is differentiated from 12 other species similarly armed [not including *H. filumferens* n.sp. recorded in the preceding paper]. R.T.L.

(80g) The egg envelopes of both *Ascaridia galli* and *Heterakis gallinae* possess three essential membranes. These eggs reach infectivity in weak formalin in 12 to 14 days at ordinary room temperatures. The thermal death point of *H. gallinae* eggs is 134° to 136° F. and that of *A. galli* 136° to 138° F. Weak nicotine alkaloid has a stunting effect on the larvae in the egg. The longevity of the eggs of both species is thought to be well over two years. R.T.L.

(80h) Van Cleave gives reasons for not accepting the transference of his *Plagiorhynchus formosus* to the genus *Prosthorhynchus* by Travassos. The host-list of the species is extended to include the towhee, the starling, the grackle, and the hermit thrush. Its geographical distribution is apparently restricted to a small area of which the District of Columbia is the centre. After discussing the variability of lemnisci the author is unable to find any significant point of difference between *Furcata adlueheia* and *Lueheia inscripta* and he regards *Furcata* as certainly a synonym of *Lueheia*. R.T.L.

81—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. ELLIOTT, M., 1942.—“A new treatment for dracontiasis.” 35 (6), 291–301.
- b. LANE, C., 1942.—“The name of the nonperiodic *Wuchereria* of the Pacific.” 35 (6), 327–332.
- c. BAYLIS, H. A., 1942.—“Zoological nomenclature and medical science.” [Correspondence.] 35 (6), 333–334.

(81a) Against guinea-worm Elliott recommends the intramuscular injection, near the worm, of at least 1 g. of phenothiazine in an olive oil emulsion. The injection is made at two or three points and repeated after a week. He describes the technique of preparing the emulsion and making the injections. Presenting details of 59 cases admitted to a West African Military Hospital, 23 of which were treated with phenothiazine, Elliott claims that the new therapy has led to a marked reduction in invalidism due to dracontiasis. B.G.P.

(81b) Clayton Lane enters the "*Wuchereria pacifica*" controversy [see Helm. Abs., Vol. X, Nos. 98a & 319a; Vol. XI, No. 29b] to protest, with Low, against Manson-Bahr's action in creating the name *pacifica* for a species morphologically indistinguishable from *W. bancrofti*, which remains the valid name. "Let us not start another era of nomenclatural chaos by making the naming of any parasite of man subjective and personal instead of objective and international."

B.G.P.

(81c) Without formally entering the lists, Baylis is similarly in favour of basing specific names on morphological differentiae, and using trinomial forms, where necessary, for biological races.

B.G.P.

82—Veterinary Bulletin. Weybridge.

- a. DAVEY, D. G. & INNES, J. R. M., 1942.—"The present position of phenothiazine as an anthelmintic." 12 (8), R7-R14.

(82a) Reviewing the literature on the anthelmintic use of phenothiazine, Davey & Innes deal successively with methods of administering the drug, criteria of efficacy, anthelmintic action (arranged under hosts), pharmacology and mode of action on nematodes, and toxicity (by hosts, and generally). Ninety-eight references, without titles, are appended.

B.G.P.

83—Veterinary Medicine.

- a. BOLEY, L. E., MORRILL, C. C. & LEVINE, N. D., 1942.—"A note on the effect of large doses of phenothiazine on draft horses." 37 (1), 26-29.
- b. WRIGHT, W. L., 1942.—"A note on the effect of repeated doses of phenothiazine on sheep." 37 (1), p. 33.
- c. McCULLOCH, E. C. & SEGHELLI, L., 1942.—"The effect of phenothiazine on the hemoglobin concentration, erythrocyte count and leucocyte count of swine." 37 (2), 80-84.
- d. THORNING, W. M., MORRILL, C. C. & BOLEY, L. E., 1942.—"Phenothiazine poisoning in pigs." 37 (3), 120-122.
- e. LUCKER, J. T., 1942.—"The dog *Strongyloides*, with special reference to occurrence and diagnosis of infections with the parasite." 37 (3), 128-137.
- f. STEINBACH, F. G., 1942.—"The use of n-butyl chloride intracurally for trichuriasis." 37 (4), p. 184.
- g. WHITNEY, L. F., 1942.—"Hydrogen peroxide treatment for whipworms." 37 (5), 217-219.

(83a) Boley et al. report on dosing 4 horses with from 80 to 400 g. phenothiazine. Seven Newcomer haemoglobin estimations were made before treatment and on alternate days for 6 weeks after treatment. Repeated haemoglobin estimations are necessary owing to the large day-to-day variation. No effect was found in the horse given 80 g. Two given 160 g. and 400 g. showed a transient anaemia. The fourth, given 324 g., died in 3 days but death may have been partly associated with pre-existing inappetence and carcinoma of the penis.

B.G.P.

(83b) Wright gave a single dose of 25 g. phenothiazine to 3 lambs, 6 weekly doses of 25 g. to 3 more, and kept 3 controls. No effects of treatment were found in weekly estimations of weight, blood haemoglobin, and urinary constituents.

B.G.P.

(83c) From haemoglobin estimations and red and white cell counts on 4 pigs, 3 of which were given daily doses of 12 to 30 g. phenothiazine for 42 to 74 days, McCulloch & Seghetti found that daily 15 g. and 30 g. doses produced a reduced haemoglobin index and red cell count. No pathological lesions were found post mortem. The pig given 74 × 12 g. doses developed posterior paralysis and contained 4 male ascarids at post-mortem.

B.G.P.

(83d) Thorning et al. report a case in which 112 piglets of 20 lb. average weight were given (accidentally) 909 g. phenothiazine in their food. After 10 hours only 12 were able to stand, but most recovered. Seven blood examinations were normal. In addition to incoordination and posterior paralysis, transient corneal opacity was commonly found.

B.G.P.

(83e) Recording 7 cases of *Strongyloides* (possibly *S. stercoralis*) in dogs in U.S.A. from 1938 to 1941, Lucker describes and figures the parasitic and free-living stages in detail, and includes comparative figures of other larvae occurring in faecal cultures. Both types of life-cycle occurred in each case, the indirect predominating. Parasitic males were not found.

B.G.P.

(83f) Steinbach recommends a single intracaecal injection (by bulb and syringe) of 1 ounce of *n*-butyl chloride for a 20 lb. dog infested with *Trichuris*. With the dog strapped and its hind quarters elevated, the method is simpler and far more effective than oral administration. B.G.P.

(83g) Whitney recommends the slow intracaecal injection of 1.5% hydrogen peroxide solution, at 1 ounce per 10 lb., against *Trichuris* in dogs. Certain precautions have to be taken in view of the gas liberated, and a hydrostatic head of 1 ft. gives sufficient pressure. B.G.P.

84—Veterinary Record.

- a. BIRKETT, J. D., 1942.—“Intratracheal injections in parasitic bronchitis.” [Correspondence.] 54 (27), p. 274.
- b. ANDERSON, L. G., 1942.—“Intratracheal injections in parasitic bronchitis.” [Correspondence.] 54 (29), p. 297.
- c. WEDDELL, M. H., 1942.—“The toxicity of phenothiazine.” [Correspondence.] 54 (30), p. 308.
- d. TAYLOR, E. L., 1942.—“Intratracheal medication in parasitic bronchitis.” [Correspondence.] 54 (36), p. 366.

(84a & b) In letters to the Editor both Birkett and Anderson controvert Taylor's view that treatment of lungworm by intratracheal injection owes its success mainly to the accompanying improvements in housing and feeding [see Helm. Abs., Vol. XI, No. 30a]. Both favour prescriptions containing turpentine and carbolic acid, and Birkett suggests that lungworms may be expelled by the violent coughing provoked by the injection. B.G.P.

(84c) Weddell suggests that there may be two distinct toxic actions in phenothiazine poisoning in horses, one being a group sensitivity, possibly of nutritional origin, and the other acute haemolytic anaemia of chemical origin. W.P.R.

(84d) Replying to correspondents [see above Nos. 84a & b] Taylor pleads for controlled experimentation in assessing the results of therapeutic treatment, the paucity of which in the case of parasitic bronchitis makes it difficult to decide the worth of traditional remedies. B.G.P.

85—Zeitschrift für Fleisch- und Milchhygiene.

- a. SCHMID, F., 1942.—“Zum Nachweise von Trichinen in Wurst und Schinken.” 52 (17), 193–195.
- b. MÜLLER, 1942.—“Der Kampf gegen die gesundheitsschädlichen Finnen.” 52 (18), 214–216.

(85a) Schmid has examined the various methods used for the detection of *Trichinella spiralis* larvae in sausage and ham. Concentrating larvae by digesting large samples of meat product was found to be efficient, though time-consuming. Examination in the compressorium was rapid but many larvae were overlooked. However, this latter method was rendered extremely efficient by immersing the slices of meat in 10% caustic potash for 30 to 60 minutes before examination, the larvae then appearing clearly visible. W.P.R.

NON-PERIODICAL LITERATURE

- 86—GÄRTNER, E., 1942.—“Arsinosolvin-Tabletten und Perequid-Tabletten als Wurmmittel gegen Strongyloiden und Askariden beim Pferd.” Dissertation, Hannover.
- 87—SCHMID, F., 1942.—“Diagnose und Bekämpfung der parasitären Krankheiten unserer Haustiere.” Berlin, 3. Aufl., 244 pp.
- 88—UNITED STATES DEPARTMENT OF AGRICULTURE, 1942.—“Index-catalogue of medical and veterinary zoology. Part 6. Authors: G to Gyser.” Washington, D.C., pp. 1459–1754.